



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/418,119 | 10/14/1999 | ANGSHUMAN SAHA | 239604 | 8445 |

7590 03/04/2003

PILLSBURY MADISON & SUTRO LLP
NINTH FLOOR EAST TOWER
1100 NEW YORK AVENUE N W
WASHINGTON, DC 200053918

EXAMINER

NGUYEN, DUNG X

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2631

DATE MAILED: 03/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/418,119

Applicant(s)

SAHA ET AL.

Examiner

Dung X Nguyen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 1999.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 - 24, and 37 - 41 is/are rejected.
- 7) ☒ Claim(s) 25 - 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The followings are quotations of the first paragraph and the second paragraph of 35 U.S.C. 112:

(1) The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

(2) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 25 – 30 and 31 – 36 are rejected under 35 U.S.C. 112, first paragraph**, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Regarding claim 25, the limitation is a negative limitation. *Ex parte Parks*, 30 USPO2d 1234, 1236 (Bd. Pat. App. & Inter. 1993).

Regarding claim 31, the statement on lines 5 - 6 is a negative limitation. *Ex parte Parks*, 30 USPO2d 1234, 1236 (Bd. Pat. App. & Inter. 1993).

3. **Claims 17 – 22 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 2631

Regarding 17, the limitation stated on lines 3 – 4 is conflicted with the limitation stated on lines 5 – 6.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. **Claims 1, 2, 9, and 10 are rejected** under 35 U.S.C. 102(e) as being anticipated by Ducaroir et al. (US patent # 6,167,077).

Regarding claim 1, Ducaroir et al. discloses (figures 1 & 2 and column 1, line 51 to column 3, line 35):

- First device (base clock) transmitting synchronization request on the plurality serial lines to second device (remote clock) and becoming synchronization in response to the synchronization request (column 2, lines 14 – 53);

Art Unit: 2631

- Second device (remote clock) transmitting synchronization request on the plurality serial lines to second device (remote clock) and becoming synchronization in response to the synchronization request (column 2, line 54 to column 3, line 4);
- Transmitting data on plurality of serial lines from the first device to second device after the first device has become synchronized in response to the request for synchronization (column 3, lines 12 – 25).

Regarding claim 2, Ducaroir et al. further discloses (figures 1 & 2 and column 1, line 51 to column 3, line 35): transmitting data from the second device to the first device after synchronized second device has received data transmitted from the first device (column 3, lines 12 – 26).

Regarding claim 9, the limitations are analyzed in the same manner set forth as claim 1.

Regarding claim 10, the limitations are analyzed in the same manner set forth as claim 2.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 3 – 8 and 11 – 16 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Ducaroir et al. (US patent # 6,167,077), further in view of Franaszek et al. (US patent # 6,215,412 B1).

Regarding claim 3, the limitations analyzed in claim 1 are equally applied to this claim. Ducaroir et al. differs from the instant claimed invention that it does not show the becoming unsynchronzied at the first device in response to receiving a loss of synch signal from at least one of the deserializers of the first device. However, Franaszek et al. discloses that the connection control and data transfer occurs in such manner that the switching means is devoid of requiring any synchronized clocking signals, whatsoever (column 3, lines 14 – 29). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Ducaroir et al. and Franaszek et al. that to make the first word device is unsynchronized in response to the loss of sync signal or defective on serial lines connected to the second word device in order to save the power.

Regarding claim 4, the limitations analyzed in claim 1 are equally applied to this claim. Ducaroir et al. differs from the instant claimed invention that it does not show the step of detecting at the second device a bad control word that is inconsistent across the deserializers of the second device; and transmitting a synchronization request on the plurality of serial lines from the second device to the first device after the second device has detected the bad control word. However, Franaszek et al. discloses that the connection control and data transfer occurs in such manner that the switching means is devoid of requiring any synchronized clocking signals, whatsoever (column 3, lines 14 – 48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Ducaroir et al. and Franaszek et al. that to make the detecting at the second device a bad control word that is inconsistent across the deserializers of the second device; and transmitting a synchronization request on the plurality of serial lines from the second device to the first device after the second device has detected the bad control word in order to save the power.

Regarding claim 5, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to set the first device and the second device to satisfy any specification for control characters.

Art Unit: 2631

Regarding claim 6, the limitations analyzed in the combination of claims 1 and 5 are equally applied to this claim. Ducaroir et al. differs from the instant claimed invention that it does not show the step of detecting at the second device a bad control word that is inconsistent across the deserializers of the second device; and transmitting a synchronization request on the plurality of serial lines from the second device to the first device after the second device has detected the bad control word. However, Franaszek et al. discloses that the connection control and data transfer occurs in such manner that the switching means is devoid of requiring any synchronized clocking signals, whatsoever (column 3, lines 14 – 48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Ducaroir et al. and Franaszek et al. that to make the detecting at the second device a bad control word that is inconsistent across the deserializers of the second device; and transmitting a synchronization request on the plurality of serial lines from the second device to the first device after the second device has detected the bad control word in order to save the power.

Regarding claim 7, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the connection lines by fiber optics.

Regarding claim 8, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to make the connection lines by a ribbon fiber of fiber optics.

Regarding claims 11 - 16, the limitations are analyzed in the same manner set forth as claims 3 – 8, respectively.

8. **Claims 23 and 24 are rejected** under 35 U.S.C. 102(e) as being unpatentable over Prentice et al. (US patent # 6,397,042 B1), and further in view of Ranjan et al. (US patent # 6,397,042).

Regarding claim 23, Prentice et al. discloses (figure 1):

- First word device 10 and second word device 12, first word device 10 being synchronous (see column 1, lines 33 – 35) and connected to second word device 12 by plurality of serial lines (13, 15);

Art Unit: 2631

- Either transmit buffer 13 or receive buffer 15 is defective; the internal loopback testing function will not detect it (see column 1, lines 37–39 and column 3, lines 5-7).

Prentice et al. differs from the instant claimed invention that it does not expressly show that at the first device becoming unsynchronized in response to receiving a loss of sync signal of serial lines connected to second device. However, Ranjan et al. discloses that the clock trees are local to the I/O interface and trigger a plurality of output data signals from the core in asynchronous mode or synchronous mode (abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Prentice et al. and Ranjan et al. that to make the first word device is unsynchronized in response to the loss of sync signal or defective on serial lines connected to the second word device in order to save the power.

Regarding claim 24, Prentice et al. further discloses (figure 1):

- First word device 10 and second word device 12, each includes serializer 16 and deserializer 18;
- The serial line connects the serializer of the first word device to the deserializer of the second word device and vice versa;
- The serializer and the deserializer of the first and second devices satisfy a SERDES specification for control characters (column 3, lines 9 – 16).

Prentice et al. differs from the claimed invention that it does not use a plurality of serializers and deserializers. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use Prentice et al. to implement a plurality of serializers and deserializers via a plurality of serial lines in case of multiple data links.

9. **Claims 37 - 41 are rejected** under 35 U.S.C. 102(e) as being unpatentable over Ducaroir et al. (US patent # 6,167,077), and further in view of Soleiman et al. (US patent # 6,373,858).

Regarding claim 37, Ducaroir et al. discloses:

Art Unit: 2631

- A first device (base transceiver) and a second device (remote transceiver), a first device being synchronized (column 2, lines 26 – 30) and connected to second device by a plurality of serial lines (abstract).

Ducaroir et al. differs from the instant claimed invention that it does not show the detecting a confirming word from the serial lines connected to the second device, wherein the second device separates the transmission of confirming control words by a threshold number of intervening words. However, Soleimani et al. discloses the missing part of Ducaroir et al. in comparing with the instant claimed invention (column 2, lines 10 – 41). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine Ducaroir et al. and Soleimani et al. to confirm control words in a multiple data links.

Regarding claim 38, the limitations analyzed in claim 1 are equally applied to this claim. Ducaroir et al. and Soleimani et al. differ from the instant claimed invention that it does not expressly show wherein the threshold is sufficient to prevent an unsynchronized reception of the designated control word at the first device. However, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to confirm control words in a multiple data links wherein the threshold is sufficient to prevent an unsynchronized reception of the designated control word at the first device.

Regarding claim 39, Ducaroir further discloses:

- The first and second devices each includes a plurality of serializers and deserializers (column 1, line 58 to column 2, line 2);
- The serial lines connect the serializers of the first device to the deserializers of the second device and vice versa (column 1, line 51 to column 2, line 13).

Ducaroir differs from the instant claimed invention that it does not expressly show the serializers and deserializers of the first and second devices satisfy a SERDES specification for control characters. However, setting the serializers and deserializers of the first and second devices to satisfy the SERDES specification is just the matter of choice. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use

Art Unit: 2631

Ducaroir et al. to set the serializers and the deserializers of the first and second devices to satisfy the SERDES specification for control characters.

Regarding claim 40, the limitations are analyzed in the same manner set forth as claim 38.

Regarding claim 41, the limitations analyzed in claim 1 are equally applied to this claim. Ducaroir et al. and Soleimani et al. differ from the instant claimed invention that it does not expressly show wherein the confirming control word is also used as a framing indicator. However, Soleimani et al. discloses the use of multiple hypothesis testing (column 2, lines 34 – 41) and framing indicator is also one of multiple hypothesis testing+. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to confirm control words in a multiple data links wherein the confirming control word is used as a framing indicator to make reliable rejection of false ambiguities.

Allowable Subject Matter

10. **Claims 25 – 30 are objected** to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Giallorenzi et al. (U.S. Patent No. 6332,008 B1) discloses a synchronizer and method therefore and communications system incorporating same.

Olafsson (US patent # 6,332,009 B2) discloses a method and its corresponding apparatus for generating a line impairment learning signal for a data communication system.

Art Unit: 2631

Movshovich et al. (U.S. Patent No. 6,449,291 B1) discloses a memory-based circular queue with local descriptive information to implement a storage area for filtering MPEG-2 packets that are distributed and/or processed under the control of a host microprocessor by direct memory access mechanism.

Burns et al. (U.S. Patent No. 6,449,291 B1) discloses a method and its corresponding apparatus for time synchronization in a communication system.

Contact Information

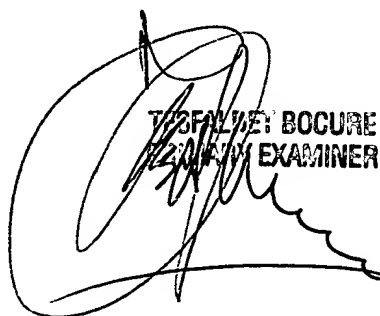
12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 9:00 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Chi Pham can be reached on (703) 305-4378. The fax number for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

DXN

February 24, 2003


T33FALL/ET BOCURE
2/24/03 EXAMINER